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AMERICA'S FIRST AGRICULTURAL SCHOOL

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THE establishment, a century ago, of "an institution destined to prepare youth by a scientific education to become skillful farmers and mechanics" is in itself notable. As the Gardiner Lyceum was not only our first agricultural school, but the first institution to receive a state appropriation for agricultural instruction, its foundation may almost be said to mark an epoch. The importance of agricultural schools and colleges in our educational system renders of present interest a brief sketch of this pioneer institution, which emphasized the practical value of science, and introduced an elective system, student self government and winter short courses.

The idea of such a school originated with Robert Hallowell Gardiner, who was a member of its board of trustees and its chief benefactor. Of this remarkable man, pioneer in many lines and promoter of everything that seemed for the good of the community which now bears his name, little need be said. Sympathetic biographical sketches are avilable (5) and his work is mentioned in several histories of Gardiner, Maine (7). His part in the origin of the Lyceum is, however, of direct interest and is told in the manuscript autobiographical notes which he prepared some years before his death and which are now in the possession of his descendants, who have courteously made them available to the writer.

In beginning his account of the foundation of the Lyceum, Gardiner states that he had frequently been impressed by the fact that skilled workmen, such as surveyors and millwrights were

> wholly ignorant of the principles upon which their arts depend, so that when anything occurred out of the common routine, I found them utterly at a loss how to proceed. Our farmers were still less intelligent.
>
> After reflecting much upon this subject, I became impressed with the belief that an institution might be established which would put the acquisition of so much science as was requisite to make skillful farmers, millwrights, and other mechanics, within the reach of all who wished to follow these branches of business. I communicated these views to a number of gentlemen of practical intelligence who highly approved them, as was shown by their subsequently sending their sons to the Lyceum when it was established. Wishing the co-operation of my fellow citizens, I called a meeting and proposed the subject, which produced a hearty response.
>
> I proposed to give as an endowment 312 acres of land fronting on Kennebec River, and valued at $3,744.00 to which I subsequently added 122 acres adjoining, making a total of 434 acres valued at $5,208.00. They proposed to erect the building to which I only contributed $100.00.

The building referred to was a substantial two-story stone structure, and its erection by subscription is evidence of real interest in technical education in that community. In the development of such a sentiment the work of Dr. Benjamin Vaughn (3) in making available through publication in this country European work on agriculture, notably the now little known "Rural Socrates" (1800) and some extracts from Buffon's works, in urging the importance of experimental study of agricultural problems, and in the establishment of agricultural societies, must have played a large part.

The grounds and building for the new school being thus assured the state legislature was petitioned for an act of incorporation and for assistance. A portion of this petition is here quoted for the statement it gives of the purposes of the Gardiner Lyceum.

> The petition of the subscribers represents that a donation has been offered of land lying on Kennebeck River, estimated at $4,000.00 for the purpose of establishing . . . a school for teaching mathematics, mechanics, navigation and those branches of natural philosophy and chemistry which are calculated to make scientific farmers and skillful mechanics.
>
> And whereas it is an object of very great importance to any state . . . that its citizens should possess an education adapted to make them skillful and able to improve the advantages which nature had so lavishly bestowed upon them, and whereas the State of Maine . . . has hitherto omitted to make provisions for giving instruction to her seamen, her mechanics, and her farmers, upon whom the wealth and prosperity of the State mainly depend . . .
>
> They would therefore pray your honorable bodies to incorporate a school for the above purposes, with a body of seven Trustees with the usual powers and privileges, to be called the "Gardiner Lyceum" and to grant such aid as will enable the Trustees to bring the school into immediate usefulness. Signed by R. H. Gardiner and 53 others.

In response to this petition the Maine legislature passed what is apparently the first recognition, by an American legislative body, of a distinctively agricultural school.

> Private acts of the State of Maine, Chapter CVIII.
>
> AN ACT to incorporate the Trustees of the Gardiner Lyceum.
>
> Sec. 1. *Be it enacted by the Senate and House of Representatives, in Legislature* assembled, That an institution, designed to prepare youth by a scientific education to become skillful farmers and mechanics, be established in the town of Gardiner, to be called the Gardiner Lyceum; and that Robert Hallowell Gardiner, Peter Grant, Sanford Kingsberry, Frederick Allen, John Stone, and Edward Swan, Esquires, be and they are hereby incorporated into a body politic, by the name of the trustees of the Gardiner Lyceum; . . .
>
> (This act passed January 30, 1822).

The Gardiner autobiography states that the name "had been chosen to distinguish the institution as distinct from a high school or college" and further that "Mr. Allen almost immediately resigned and Mr. Evans, who was very efficient in carrying out the objects of the institution was elected in his place".

The next step was the publication, in 1822, of an "Address to the Public" from the trustees of the Gardiner Lyceum. This address, which was prepared by Mr. Gardiner and signed by him in the name of the trustees, stresses the importance of a knowledge of science in practical affairs, and outlines the objects of the institution, as indicated by the following quotations:

> The practical utility of science cannot be doubted, in an age where its investigations have produced such astonishing improvements as in the present. There is scarcely an art, which has not directly or indirectly received from it important services, for science must necessarily be the foundation of every art.
>
> With a view to furnish to farmers and mechanics the education here represented as so useful, the Gardiner Lyceum has been established; and the course of study will be arranged with particular reference to the wants of those classes, for whose particular benefit it was designed. As soon as a suitable apparatus can be provided, lectures will be given upon the sciences there taught; and the application of those sciences to the arts will be illustrated as fully as the nature of lectures will admit.

Gardiner states in his autobiography that, "Copies of the address were sent among others to the two ex-presidents, Adams and Jefferson, from both of whom I received civil answers approving the plan". Thus, even in small ways, did these two great Americans promote the cause of education.

The address referred to announces the opening of the school early in January, 1823, and the appointment of Mr. Benjamin Hale, a tutor in Bowdoin College, as principal and lecturer in natural philosophy. Of him the Gardiner autobiography says with apparent fairness:

> Mr. Hale was admirably adapted to the situation. He was a man of great insight into character, and with a strong disposition to break through established routine when change offered improvement, and therefore entered warmly into a plan which though novel, promised essential benefit to an important class in the community. He had the power of gaining the confidence and commanding the respect of young persons intrusted to his charge, for while he was earnest to give them high motives of action, he thought it better not to notice and punish trifling misdemeanors arising rather from boyishness than from bad disposition.

Mr. Hale's inaugural address, which was published by the trustees, follows Mr. Gardiner's publication in emphasizing the practical importance of science and states the object of the Lyceum in these words:

> In exhibiting, as we have endeavored briefly to do, the connexion of science with the useful arts, and showing the importance of the former as the foundation of the latter, we have given you in part the views, which led to establishment of the Gardiner Lyceum. It is the object of this institution to give instruction in those branches which are most intimately connected with the arts, and to teach them as the foundation of the arts. In this respect we believe its design to be original.
>
> But it is plain that to practical men science must be taught in a practical manner. We are taught this by the frequent failures of men who are not deficient in the general principles of science, but who are unacquainted with the particular science of the arts.

Under Hale's enthusiastic leadership the institution throve. In January, 1823, an appropriation of one thousand dollars and the tax on the Gardiner bank amounting to another thousand was secured from the state legislature. The catalogue published in November, 1823, shows that there were twenty students, the next fall there were fifty-three and in February, 1828, a committee of the Maine legislature reported that,

> Since the Institution commenced its operations, the number of students who have been instructed there, for longer or shorter periods of time, is one hundred and ninety-one. Many of these have completed the whole term of three years . . . Several have remained for shorter periods having in view the attainment of but one particular science, such as surveying, mechanics, navigation, chemistry, . . .

The catalogue for 1823 announces (p. 9) an elective system which must have been as much of an innovation as the school itself.

> It will be seen at once, from the remarks above made, that the course which will be pursued cannot be minutely detailed as it must often be subject to variations from the necessities of students, arising from the nature of the object they have in view and the pursuit for which they wish to be qualified. These objects and destined pursuits of the students will ever be attended to, and no one will be obliged to study that, which will not be of material service to him . . . Where there are several who are under the necessity of leaving the common course, and their studies take the same direction, they will form a class, and if a suitable text book can be found, recitations will be had as usual. But in most cases, particular studies, such as the application of chemistry to the individual Arts, will be pursued by one or two only, and suitable books for recitation can rarely be had. Such students must pursue such a course of reading as will be pointed out to them, and will be assisted by frequent Examinations and Explanations, and will have when necessary the liberty of privately experimenting.

The announcements in the catalogue for 1824 were even more startling and include the inauguration of winter short courses for those unable to attend the full session, with instruction in surveying, navigation, architecture, and chemistry; and the development of a plan of student self government not unlike that in use in some colleges to-day. The catalogue for 1824 concludes with this optimistic remark:

> We hope that the time is not far distant, when it shall be as common for farmers and artists, to prepare themselves for their business by a suitable and thorough education as for lawyers and physicians.

In August, 1827, Mr. Hale resigned to become professor of chemistry at Dartmouth. Of this the Gardiner autobiography says:

> His loss was irreparable. He had identified himself with the institution, and associated its success with his own reputation.

In January, 1828, there appeared the first number of the *New England Farmer's and Mechanic's Journal,* this monthly which was published in Gardiner, continued for ten numbers, and contained original and quoted articles arranged under three headings, Mechanics, Agriculture and Miscellaneous. Under the first head were included descriptions of such machines as the "Bliss moveable hay press" and "Lane's patent Corn-Sheller"; under the second were discussed "Economy in fodder" and "Preservation of Potatoes" and similar subjects; while the third division included such timely matter as "Method of making Transparent Soap" and "Blacking-Balls for shoes." The cover of the journal bears the inscription,

> Conducted by E. Holmes, M. D., Professor of Chemistry, Natural History and Agriculture in Gardiner Lyceum.

Ezekiel Holmes, a graduate of Brown in 1821, and of Bowdoin Medical School in 1824, was appointed to the faculty of the Gardiner Lyceum in the fall of 1824. Whatever his influence in that school, and the Gardiner autobiography indicates that it was not great, his connection with it was apparently effective in directing his attention from medicine to agriculture to the great benefit of agriculture in the State of Maine. He was for over thirty years editor of the *Maine Farmer*, the first secretary of the state board of agriculture, and of the state agricultural society and the

> last public act of his life was that of securing from the legislature in February, 1865—but a week before his death—an act which established the State College of Agriculture and Mechanic Arts as a separate and independent institution. (4:44-46).

After 1831 state aid for the lyceum was withdrawn, and at this time Mr. Gardiner himself recommended that the school be closed, "but the feeling of the citizens was so strong for its continuance" that an attempt was made to carry on the work. The nature of the institution, however, became gradually changed until the studies were practically those of the other academies throughout the state. Whereas in 1824 the course of study included no languages except English, and featured chemistry, natural philosophy, agricultural chemistry, mathematics and navigation; fifteeen years later (catalogue of 1839) the course of study included Greek, Latin, French and Spanish, with science occupying an inconspicuous place. In 1839 a "Female Department" was opened in the lyceum. In 1848 it was reorganized as an academy, and in 1857 the building, which was later (1869) destroyed by fire, was sold to the city of Gardiner and occupied as a high school. (7).

The question naturally arises why an institution so broadly planned and so successfully started should have decayed so quickly. For its continuation as a popular institution state aid was necessary and this could not be secured after 1831 for reasons set forth by Gardiner in his autobiography.

> The plan of the school required considerable funds for its support, and from the general approbation with which the plan was received by the public, it was supposed that these funds would be readily granted by the Legis-

> lature. It had however been but a short time in operation before jealousies were excited, and opposition grew up in various quarters. The Academies found their scholars attracted to the superior education at the Lyceum, and the Colleges believed that they would lose scholars who could dispense with the classics and be satisfied with a more practical knowledge, attained with a less amount of time and money.
>
> Then came into operation the religious prejudice. All the higher institutions of learning were under the patronage of some particular denomination. They therefore combined against an institution which claimed no sectarian support . . . . . [and] it was evident that no further aid could be expected from the State.

The work begun by the Gardiner Lyceum has not been neglected, however. Robert Hallowell Gardiner concludes his autobiographical record of the lyceum with a reference to the establishment of the Lawrence Scientific School and to the fact that many

> colleges have modified their laws . . . a higher practical education is therefore now afforded to those who desire it than could be attained at the Lyceum, which was only designed to give needful instruction to the laboring mechanic without raising him out of his position.

The very years those words were written (probably 1859-1861) there was being pressed in Congress an act which was to establish in every state institutions for the very purpose and along much the same lines as the Gardiner Lyceum. Indeed, so wholly in sympathy with the aims of the lyceum was the author of that act, Justin S. Morrill, that it is difficult to avoid the belief that he knew of the Gardiner institution. Morrill was a young clerk in Portland, then the capital of Maine, from 1828 to 1831, years in which its claims were being actively pressed before the legislature. May not the future legislator then have followed with interest the discussions upon the Gardiner Lyceum?

STATE AID

One thousand dollars as the annual expenditure of a state for agricultural education seems small, but a century ago, forty years before the passage of the Morrill Act by Congress, such a step was evidence of unusual progressiveness and interest. This appropriation, first made in 1823, and renewed in 1825 for three years, and again in 1828 for three years, was apparently the first allotment of public funds for agricultural education in the United States. When it is remembered that this enactment was made by the legislature of a new and sparsely settled state, for an institution wholly new in design, the wonder is not that the appropriation was so small and continued for only seven years, but that it was made at all.

That so advanced a position was taken by Maine legislatures at this early date is due to several influences. The state was strongly committed to a policy of public support of education by the recently adopted constitution. In fact the portion of that constitution which deals with education and authorizes state support of academies and colleges (Article VIII) had been prepared only a few years before by Thomas Jefferson, founder and even then the acknowledged leader of the party to which a large majority of the legislature belonged. Moreover, Maine was fortunate in her early years in having a succession of able and progressive governors who were interested in education.

The first governor, William King, was, as a member of the constitutional convention, active in having Article VIII included in the constitution, and later (2) vouched for the fact that it was in substance prepared by ex-president Jefferson. The portion of the message of Governor Albion K. Parris, which deals with the Gardiner Lyceum, deserves partial quotation.

> An institution has recently been established in Gardiner, upon a plan original in its design, but promising much solid public utility. The encouragement of those arts, by which the labor of man can be aided and rendered more productive, is worthy of the patronage of any government . . . As the benefit to be derived from this institution will be realized by the agriculturalist and the mechanic it may properly be considered in connection with these employments, as promotive of the public interest, and consequently entitled to the public patronage. (January 2, 1823).

Two years later, the law having constituted the Governor a member of the Board of Visitors of the Lyceum, Governor Parris's message discusses it more at length and concludes:

> There was no institution in which those branches were exclusively taught which are particularly applicable to the agricultural and mechanical employments of the people and to the ordinary business of life. The institution at Gardiner will supply this instruction in such a manner, that the individual who seeks knowledge in one branch only of the useful arts will not necessarily be diverted from his paramount object. . . . Such establishments, which have for their primary object the dissemination of useful knowledge among the productive classes of the community, are obviously entitled to liberal support. (January 7, 1825).

The next governor, Enoch Lincoln, whose older brother Levi, as governor of Massachusetts, was responsible for the establishment of our first state geological survey, was also much interested in education, and commented favorably on the work of the Gardiner Lyceum in his message of January 8, 1829. It was during his administration that the last state appropriation for the institution was made.

THE UNIVERSITY OF VIRGINIA AND THE GARDINER LYCEUM

To associate a state university with a small agricultural school, the very name of which has been forgotten half a century, may seem forced. Yet so striking, in some respects, is the similarity of the Gardiner Lyceum and the University of Virginia that it could not escape the notice of any student of the history of science in this country. They were founded at about the same time, the Gardiner Lyceum opening to students in 1823, the University of Virginia in 1825. Both depended largely on state aid for support and both, at a time when practically all academies and colleges were directly affiliated with some religious denomination, followed the University of Pennsylvania in remaining free from sectarian influence. The introduction of an elective system in the Gardiner Lyceum has already been referred to, and, as is well known, the University of Virginia was the first collegiate institution in America to adopt this system.

A further resemblance between these institutions is that they introduced, almost a century ago, a system of student self government. The catalogue of the lyceum for 1824 states (p. 9):

> One of the most important subjects, which engage the attention of those, who have the care of a literary institution, is that of discipline. The common methods, from some cause or other, are in a great measure ineffectual, and the fact that they are so under the best instructors, leads us to suppose that something wrong exists in the very principle, upon which they are founded.
>
> These methods have been long in use, were adopted in times very different from the present, and have remained unchanged amid very important revolutions of opinion. They commenced during the prevalence of absolute governments, and are now almost the only vestiges of such governments to be found in countries like our own.
>
> In schools, in which the government is wholly in the hands of the officers, and the students have no part but to obey, they are often subjected to regulations, of which they are not taught the propriety, or which they consider unreasonable, and the result is, they look upon their instructors as tyrants, whose laws it is heroism to disobey.
>
> . . . .
>
> It is probably to the arbitrary nature of school discipline, which finds no parallel in the political institutions of our country, that we may trace that party spirit in public institutions, which arrays the students in opposition to the government, [and] which oftimes renders obedience unpopular.

The author of the Declaration of Independence himself could hardly have offered a more scathing denunciation of college administrative methods. Indeed, Jefferson's own words in his report to the legislature of Virginia (1 p. 94) seem mild by contrast.

> The best mode of government for youth in large collections is certainly a desideratum not yet attained with us. It may be well questioned whether, *fear,* after a certain age, is a motive to which we should have ordinary recourse.

Jefferson's report and the catalogue of the Gardiner Lyceum further agree in calling attention to the system of student self government then in use in certain English schools.

The most distinctive resemblance between the two institutions is in the fact that both emphasized the practical importance of science, the importance of science in education, and even the relation of science to agriculture. These indeed furnished the very reason for the establishment of the Gardiner Lyceum and they were uppermost in the minds of the founders of the University of Virginia. The attitude of the

"Father of the University of Virginia" on the importance of science in the state (1 p. 89) and of science in education is well known. It is not, however, always remembered that in his original plan (1 p. 83) agriculture was included among the subjects to be taught in the university. Indeed, about the time the Gardiner Lyceum was founded (1822) the Agricultural Society of Albemarle attempted to raise funds for the establishment of a professorship of agriculture in the University of Virginia (8 p. 163). The following quotation taken from the letters sent out at this time by the society and signed by James Madison, then its president and a member of the Board of Visitors of the University of Virginia, undoubtedly represents the attitude of the other university authorities.

> This science [chemistry] is every day penetrating some of the hidden laws of nature and tracing the useful purpose to which they may be made subservient. Agriculture is a field on which it has already begun to shed its rays, and on which it promises to do much toward unveiling the processes of nature to which the principles of agriculture are related. The professional lectures on Chemistry, which are to embrace those principles, could not fail to be auxiliary to a professorship having lessons on agriculture for its essential charge.

A brief quotation from the first "address to the public" prepared by Robert Hallowell Gardiner will show how similar were the ideas of those who founded the two institutions.

> Agriculture, too depends much upon chemistry. It is the business of this science to investigate the nature of soils, the cause of their fertility or barrenness, to ascertain the composition of manure, and the kind best suited to give fruitfulness to each kind of soil. The experience of Lavoisier, who in a few years, doubted his crops, is sufficient to prove the utility of chemistry, when applied to the cultivation of the earth.

In comparing the ideas expressed in the foundation of the University of Virginia and the Gardiner Lyceum, one is tempted to go further and note the similarity of tastes of their founders. They had much in common, a generous hospitality, an appreciation of education and the need of wider opportunities for scientific training, keen interest in farm problems and a love of out of doors. Both even kept careful meteorological records. In political thought, however, they could hardly have been further apart. Indeed, viewed at the distance of a century, Robert Hallowell Gardiner's attitude toward Thomas Jefferson seems like irrational prejudice. The school he established was of the type nearest Jefferson's ideal and had his personal endorsement, the legislature from which the school drew support was overwhelmingly of the party Jefferson founded and was strongly under the influence of his ideas, the very section of the state constitution which authorized appropriations for such purposes was written by the great Virginian and the school at Gardiner was finally wrecked through the pressure of that selfish sectarianism, the power of which Jefferson did so much to destroy in his own state. Yet throughout his life Gardiner maintained toward Jefferson that attitude of political hostility and personal criticism which was natural in a New England Federalist, who was the son of a loyalist, and a devout churchman. It may be questioned whether Jefferson's partisanship was more generous. It is the more to the credit, then, of these two pioneers in education, that in their interest in education they were ready to forget political differences, that Gardiner sent the prospectus of his school to ex-president Jefferson as well as to ex-president Adams, and that Jefferson, like Adams, sent a "civil answer approving the plan".

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